

CLAIMS

Claims 1-40 (Canceled)

41. (New) A device comprising:

an array of sensors configured in a row-column format to capture image data through a color filter having different color filter components;

an array controller configured to select subsets of the sensors for readout, wherein multiple sensors in a column of sensors are included in a plurality of the subsets of the sensors; and

a compensation system configured to compensate the image data readout from the subsets of the sensors based on the color filter components associated with the sensors in the subsets of sensors.

42. (New) The device of claim 41, wherein the compensation system further comprises:

a first amplifier configured to compensate the image data readout from sensors corresponding to a first color filer component of the color filter;

a second amplifier configured to compensate the image data readout from sensors corresponding to a second color filer component of the color filter; and

a third amplifier configured to compensate the image data readout from sensors corresponding to a third color filer component of the color filter.

43. (New) The device of claim 42, wherein the compensation system further comprises a summing amplifier configured to average the image data readout from sensors corresponding to the third color filer component, and wherein the third amplifier is configured to compensate the image data averaged by the summing amplifier.

44. (New) The device of claim 41, wherein the array controller is configured to direct a readout of the image data from a first subset of the sensors sequentially with a readout of a second subset of the sensors.

45. (New) The device of claim 44, wherein the image data is readout of the first subset of the sensors in parallel, and wherein the image data is readout of the second subset of the sensors in parallel.

46. (New) The device of claim 44, wherein the first subset of the sensors at least partially overlaps with the second subset of the sensors.

47. (New) The device of claim 41, wherein the array of the sensors includes at least one masked sensor blocked from light exposure, and wherein the compensation system is configured to determine a difference in color response between the image data readout from at least one sensor in the subsets of the sensors and the masked sensor, and wherein the compensation system is configured to compensate the difference in the color response.

48. (New) The device of claim 47, wherein the array controller is configured to direct readout of the masked sensor in parallel with at least one of the subsets of the sensors.

49. (New) A method comprising:
capturing image data with an array of sensors through a color filter having different color filter components;
selecting subsets of the sensors for readout, wherein multiple sensors in a column of sensors are included in a plurality of the subsets of the sensors; and
compensating the image data readout from the subsets of the sensors based on the color filter components associated with the sensors in the subsets of sensors.

50. (New) The method of claim 49, wherein compensating the image data readout from the subsets of the sensors further comprises:

compensating, with a first amplifier, the image data readout from sensors corresponding to a first color filer component of the color filter;
compensating, with a second amplifier, the image data readout from sensors corresponding to a second color filer component of the color filter; and

compensating, with a third amplifier, the image data readout from sensors corresponding to a third color filer component of the color filter.

51. (New) The method of claim 50, wherein compensating the image data readout from the subsets of the sensors further comprises:

averaging, with a summing amplifier, the image data readout from sensors corresponding to the third color filer component; and

compensating, with the third amplifier, the image data averaged by the summing amplifier.

52. (New) The method of claim 49, further comprising directing a readout of the image data from a first subset of the sensors sequentially with a readout of a second subset of the sensors.

53. (New) The method of claim 52, wherein the image data is readout of the first subset of the sensors in parallel, and wherein the image data is readout of the second subset of the sensors in parallel.

54. (New) The method of claim 52, wherein the first subset of the sensors at least partially overlaps with the second subset of the sensors.

55. (New) The method of claim 49, wherein the array of the sensors includes at least one masked sensor blocked from light exposure, and wherein compensating the image data readout from the subsets of the sensors further comprises determining a difference in color response between the image data readout from at least one sensor in the subsets of the sensors and the masked sensor, and compensating the difference in the color response.

56. (New) The method of claim 55, further comprising directing readout of the masked sensor in parallel with at least one of the subsets of the sensors.

57. (New) A device comprising:

an array of sensors including a first group of sensors configured to sense light and a second group of sensors blocked from light exposure;

an array controller configured to select subsets of sensors from the first group of sensors for readout and to select at least one sensor in the second group of sensors for readout, wherein multiple sensors in a column of sensors are included in a plurality of the subsets of the sensors; and

a compensation system configured to reduce fixed pattern noise in light sensed the first group of sensors based on the readout from the at least one sensor in the second group of sensors.

58. (New) The device of claim 57, wherein the compensation system is configured to determine a difference between the light sensed by the at least one sensor in the first group of sensors and the at least one sensor in the second group of sensors, and to reduce fixed pattern noise in light sensed the first group of sensors based on the determined difference.

59. (New) The device of claim 58, wherein the compensation system is configured to clip the determined difference when the determined difference is negative.

60. (New) The device of claim 57, wherein the compensation system is configured to average readouts from multiple sensors in the second group of sensors, to determine a difference between the light sensed by the at least one sensor in the first group of sensors and the average readout from multiple sensors in the second group of sensors, and to reduce fixed pattern noise in light sensed the first group of sensors based on the determined difference.

61. (New) The device of claim 57, wherein the array controller configured to select subsets of sensors from multiple consecutive rows and multiple consecutive columns of the first group of sensors.

62. (New) The device of claim 57, wherein the compensation system configured to compensate image data readout from the subsets of the sensors based on a color filter overlaying the subsets of sensors from the first group of sensors.

63. (New) The device of claim 62, wherein the compensation system further comprises:

a first amplifier configured to compensate the image data readout from sensors corresponding to a first color filer component of the color filter;

a second amplifier configured to compensate the image data readout from sensors corresponding to a second color filer component of the color filter; and

a third amplifier configured to compensate the image data readout from sensors corresponding to a third color filer component of the color filter.

64. (New) A method comprising:

selecting subsets of sensors from a first group of sensors for readout, wherein multiple sensors in a column of sensors are included in a plurality of the subsets of the sensors;

prompting readout of light sensed from at least one of the subsets of sensors in the first group of sensors and from at least one sensor in a second group of sensors blocked from light exposure; and

reducing fixed pattern noise in light sensed the first group of sensors based on the readout from the at least one sensor in the second group of sensors.

65. (New) The method of claim 64, further comprising:

determining a difference between the light sensed by the at least one sensor in the first group of sensors and the at least one sensor in the second group of sensors; and

reducing fixed pattern noise in light sensed the first group of sensors based on the determined difference.

66. (New) The method of claim 65, further comprising clipping the determined difference when the determined difference is negative.

67. (New) The method of claim 64, further comprising:

averaging readouts from multiple sensors in the second group of sensors;

determining a difference between the light sensed by the at least one sensor in the first group of sensors and the average readout from multiple sensors in the second group of sensors; and

reducing fixed pattern noise in light sensed by the first group of sensors based on the determined difference.

68. (New) The method of claim 64, further comprising selecting the subsets of sensors from multiple consecutive rows and multiple consecutive columns of the first group of sensors.

69. (New) The method of claim 64, further comprising compensating image data readout from the subsets of the sensors based on a color filter overlaying the subsets of sensors from the first group of sensors.

70. (New) The method of claim 69, wherein compensating image data readout from the subsets of the sensors further comprising:

compensating, with a first amplifier, the image data readout from sensors corresponding to a first color filer component of the color filter;

compensating, with a second amplifier, the image data readout from sensors corresponding to a second color filer component of the color filter; and

compensating, with a third amplifier, the image data readout from sensors corresponding to a third color filer component of the color filter.